

THE CLAIMS

1. (Previously Presented) An electronic device for use in assisting a hearing impaired patient having a microphone, a preamp, a signal processing stage, and an output amplifier, the electronic device comprising:

an active low pass filter responsively coupled between said signal processing stage and said output amplifier having an adjustable overshoot adapted to tunably match a measured resonance curve to provide a substantially smooth insertion gain frequency response.

2. (Previously Presented) The electronic device of claim 1, wherein said output amplifier further comprises a class D amplifier.

3. (Previously Presented) The electronic device of claim 2, further comprising a buffer stage responsively coupled intermediate said active low pass filter and said output amplifier.

4. (Previously Presented) The electronic device of claim 3, wherein the measured resonance curve corresponds to a resonance curve of an outer auditory canal of a hearing impaired patient.

5. (Previously Presented) The electronic device of claim 4, wherein said active low pass filter further comprises a variable resistor to provide said adjustable overshoot.

6. (Previously Presented) An apparatus comprising:

a microphone;
a preamp and signal processing stage responsively coupled to said microphone;
an active low pass filter responsively coupled to said preamp and signal processing stage, the active low pass filter having an adjustable overshoot adapted to tunably match a measured resonance curve to provide a substantially smooth insertion gain frequency response; and
an output amplifier responsively coupled to said active low pass filter.

7. (Original) An apparatus according to claim 6 wherein said output amplifier further comprises a class D amplifier.

8. (Original) An apparatus according to claim 7 wherein said active low pass filter further comprises a component for adjusting the overshoot of said active low pass filter.

9. (Original) An apparatus according to claim 8 wherein said component adjusts the peak frequency of said active low pass filter.

10. (Original) An apparatus according to claim 9 wherein said component further comprises a variable resistor.

11. (Previously Presented) A method of assisting a hearing impaired patient comprising:
tuning the frequency response curve of an electronic hearing aid to a measured resonance curve of said hearing impaired patient such that the electronic hearing aid provides said hearing impaired patient with a smooth insertion frequency response

12. (Original) A method according to claim 11 wherein said electronic hearing aid further comprises a class D output amplifier.

13. (Original) A method according to claim 12 wherein said electronic hearing aid further comprises an active low pass filter responsively coupled to said class D output amplifier.

14. (Original) A method according to claim 13 wherein said tuning step further comprises adjusting the overshoot of said active low pass filter.

15. (Original) A method according to claim 14 wherein said adjusting further comprises adjusting a variable resistor.

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16. (Previously Presented) An apparatus comprising:

means for converting an acoustic signal into an electrical signal;

means responsively coupled to said converting means for adjustably processing said electrical signal to produce a desired frequency response, said processing means having an adjustable overshoot adapted to tunably match a measured resonance curve to provide a substantially smooth insertion gain frequency response; and

means responsively coupled to said processing means for amplifying said processed electrical signal.

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17. (Original) An apparatus according to claim 16 wherein said amplifying means further comprises a class D amplifier.

18. (Original) An apparatus according to claim 17 wherein said processing means further comprises an active low pass filter.

19. (Original) An apparatus according to claim 18 wherein said active low pass filter further comprises means for adjusting the overshoot.

20. (Original) An apparatus according to claim 19 wherein said adjusting means further comprises a variable resistor.
